Thermal Equation of State of Stishovite	X17B1

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The pressure -volume-temperature (P-V-T) behavior in SiO_2-stishovite has been studied using a DIA-type, cubic-anvil apparatus (SAM 85) and *in situ* synchrotron X-ray diffraction at the superconducting wiggler beamline (X-17B) of the National Synchrotron Light Source at Brookhaven Nationaal Laboratory. Polycrystalline specimens previously hot-pressed in a uniaxial split-sphere apparatus were used to minimize the deviatoric stress which could affect the accuracy of cell parameter determination. The P-V-T data to pressures of 10 GPa and temperatures of 1300 K were analyzed using several approaches, including a temperature-dependent Birch-Murnaghan equation-of-state, isothermal compression, and isobaric expansion. The results obtained from these different approaches show that the entire data set is internally consistent. The bulk modulus (Ko) and axial compressibility of stishovite are compared with values obtained from Brillouin scattering and diamond-anvil cell X-ray studies on single crystal stishovite and ultrasonic studies on polycrystalline specimens. The temperature derivative of bulk modulus at zero pressure (dK/dT) was measured for the first time to be -0.036(11) GPa/K.